

Main Request for Funding Form

Lessard-Sams Outdoor Heritage Council Fiscal Year 2014 / ML 2013 Proposal

Program or Project Title: Defending the St. Croix Riverway From a Bittersweet Onslaught

Funds Requested: \$550,500

Manager's Name: Monika Chandler

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County Locations: Washington,

Ecological Planning Regions:

- Metro / Urban

Activity Type:

- Enhance

Priority Resources Addressed by Activity:

- Forest

Abstract

Oriental bittersweet is a highly destructive invasive vine threatening the St. Croix Riverway. We will survey and control infestations, develop a long-term management plan, and engage the community in ongoing Oriental bittersweet management.

Activity Detail

Design and Scope of Work

We have a window of opportunity to protect the St. Croix National Wild and Scenic Riverway from Oriental bittersweet, *Celastrus orbiculatus*, a woody vine capable of engulfing and destroying terrestrial ecosystems. The vines girdle trees, overtake canopies, shade-out other plant species, break trees by the vine weight compounded with snow, ice, and wind, and can overrun grassy areas. The US Forest Service Forest Health Protection has priority ranked Oriental bittersweet in the top five forest invasive plant species for the

northeastern area. A 40 year study in New England found a decrease from 41 to 7 herbaceous plant species and a halt to normal forest succession at the study site invaded by Oriental bittersweet.

Habitats are completely altered by Oriental bittersweet invasion resulting in a dramatic drop in species diversity and dominance of an impenetrable vine tangle. Wildlife will lose forage other than Oriental bittersweet. Fruit eating birds and some small mammals eat Oriental bittersweet ripe fruit in the fall, but the loss of other forage species, trees, and shrubs is likely to be problematic to wildlife.

Oriental bittersweet distribution along the St. Croix River is limited at this time, but the infestations are spreading. Most of the infestations are north of the city of Stillwater with some infestations emerging just south of Stillwater. Controlling these infestations now is less costly and environmentally damaging than delaying and allowing the infestations to proliferate.

We can control Oriental bittersweet along the St. Croix River shoreline if we do the following.

1. Survey and delimit infestations
2. Contain infestation spread
3. Control existing infestations
4. Prevent human mediated spread of Oriental bittersweet

We propose to develop an Oriental bittersweet management plan for the St. Croix Riverway then initiate containment and treatment efforts. In addition, we propose to conduct an outreach campaign to raise awareness of Oriental bittersweet and engage the local community in long-term Oriental bittersweet management. The Minnesota Department of Agriculture (MDA) will provide overall project coordination.

Oriental bittersweet management plan development will involve the following steps.

Infestation survey and assessment: The full extent of the infestations will be surveyed and the density of each infestation assessed. A search for satellite infestations will be conducted. Preliminary data show the infestations spanning Minnesota Departments of Transportation (MnDOT) and Natural Resources (DNR) lands in addition to private property. The sum of scattered infested areas along Highway 95 on the St. Croix is 1.12 acres. We estimate that the total infested area on the St. Croix is less than 5 acres. However, the infestations are scattered throughout a length of approximately 8 miles and ½ to 1 mile wide so approximately 4,000 acres will need to be surveyed.

Inventory infested area: Vegetation within and adjacent to infested areas will be inventoried and classified to identify areas with high value vegetation.

Analysis of infested area: A geographic information system will be used to determine where threatened and endangered species, roads, trails, access points, and impervious surfaces occur to protect and prioritize high value areas and to identify areas with a high probability of infestation spread.

Containment and control strategy: There are effective methods of controlling Oriental bittersweet. The specific methods applied in each situation will depend on numerous factors. The value of the existing vegetation, risk of non-target damage, and proximity to water will be evaluated against accessibility, labor intensity and efficacy of the control method. Using the above analysis, a long-term strategy for containment and control will be developed and will include all infested lands.

The plan for Oriental bittersweet containment and control will be implemented by Conservation Corps Minnesota crews. These are trained, equipped, and experienced crews. We request an exception to proposal requirement #11 that resources are used only on property under permanent protection of public fee ownership or conservation easement. An exception would enable crews to work across property lines. If infestations are not controlled on adjacent private land, they would be a source to re-infestation the St. Croix Riverway. It is necessary to ensure that infestations on private land are controlled to protect the investment along the St. Croix. If we achieve our goals and there are remaining Conservation Corps funds, crews will work on other invasive species at the site.

Outreach and community engagement are important to the overall success of this project. Fall fruits are very attractive and have been used for making wreaths and other decorations resulting in inadvertent seed movement that can start new infestations. A knowledgeable and involved community could identify and report new infestations and discourage people from deliberately moving Oriental bittersweet vines and fruits. We propose to inform the local community about Oriental bittersweet through the media, advertising with billboards and posters in areas frequented by anglers and other recreationists. Connection with groups such as Master Gardeners would be beneficial in addressing human mediated Oriental bittersweet spread.

Our proposed deliverables include:

1. Development of a long-term Oriental bittersweet management plan for the St. Croix Riverway
2. Quantification of acres surveyed and treated
3. An outreach and community engagement campaign that incorporates advertising to the public and connections to interested volunteer organizations

There are older, more extensive Oriental bittersweet infestations on forested hillsides of Red Wing and Winona and some small, scattered infestations in the Twin Cities. In Winona, there are swaths of downed trees with only Oriental bittersweet thriving as it grows over the dead trunks. We expect a similar level of devastation on the St. Croix if the infestations are allowed to progress. This project will focus on the St. Croix Oriental bittersweet infestations, but there will be broader applicability with raising awareness of Oriental bittersweet specifically and invasive species in general throughout the state.

Containing and controlling Oriental bittersweet is feasible. Unlike species such as buckthorn that are widespread and impossible to eradicate on a large scale, Minnesota's Oriental bittersweet infestations are at a manageable scale at this time. Oriental bittersweet is such a damaging species that a concentrated effort is in order to remove it before it spreads throughout the state.

Planning

MN State-wide Conservation Plan Priorities

- H1 Protect priority land habitats
- H2 Protect critical shoreland of streams and lakes

Plans Addressed

- Minnesota DNR Strategic Conservation Agenda
- Outdoor Heritage Fund: A 25 Year Framework
- State Comprehensive Outdoor Recreation Plan
- National Park Service Great Lakes Invasive Plant Management Plan (currently in evaluation)

LSOHC Statewide Priorities

- Address conservation opportunities that will be lost if not immediately acted on

LSOHC Metro Urban Section Priorities

- Protect habitat corridors, with emphasis on the Minnesota, Mississippi, and St. Croix rivers (bluff to floodplain)

Relationship to Other Constitutional Funds

- Environmental and Natural Resource Trust Fund

A proposal titled “Search and Destroy Target Invasive Plant Species” was submitted to LCCMR. This proposal lists Oriental bittersweet as one of the target species and includes funding for controlling Oriental bittersweet infestations in Red Wing and Winona. The infestation on the St. Croix was found after the proposal was submitted to LCCMR so was not included. The proposal was presented to LCCMR on 06/27/12 and a determination of whether it will be recommended for funding will be made in mid-July. This Lessard-Sams and the LCCMR proposed projects are synergistic.

Accelerates or Supplements Current Efforts

We recognize the significant threat Oriental bittersweet poses to the St. Croix River ecosystem. Our initial effort is focused on notification and containment. We notified applicable parties within agencies, including our counterparts in Wisconsin. Affected private landowners will be notified by the township code enforcement officer. Private landowners are unlikely to have the labor, skills and equipment to control Oriental bittersweet with chainsaws and herbicides. MnDOT, DNR, and the National Park Service (NPS) have vegetation management permits for the area and began containing the infestations by treating fruiting vines in accessible, high traffic areas. However, infestations extend into the forest and down toward the river. These infestations are difficult to delimit and control. Also, there are scattered individual vines that must be found and destroyed. This is highly labor intensive. Additional resources are required for the successful Oriental bittersweet control on the St. Croix.

Sustainability and Maintenance

The St. Croix River is permanently protected and managed habitat. The question of sustainability and maintenance in this situation relates to preventing re-infestation of the area. Fortunately, Oriental bittersweet seed does not persist long in the seedbank (estimates are 3-5 years). However, we expect that there will be a small level of seedling emergence and possible new introductions of Oriental bittersweet seed from other sources. We will have the long-term Oriental bittersweet management plan to guide actions to detect and destroy newly emerging populations. We are working with our agency partners in Wisconsin to prevent infestations on the Wisconsin side of the river. We will welcome partnership with interested volunteer organizations for long-term site monitoring and notification of new infestations. Finally, the strong, coordinated partnership of MDA, MnDOT, DNR, and NPS help to ensure the ongoing success of this project.

Is the activity on permanently protected land and/or public waters per MS 103G.005, Subd. 15? - Yes (Public Waters)

Accomplishment Timeline

Activity	Approximate Date Completed
Oriental bittersweet management plan developed	June 15, 2015
Final survey and assessment	March 29, 2019
Containment and control effort	April 30, 2019
Outreach and community engagement campaign	June 30, 2019

Outcomes

Programs in metropolitan urbanizing region

- Core areas protected with highly biologically diverse wetlands and plant communities, including native prairie, Big Woods, and oak savanna

Budget Spreadsheet

Total Amount of Request: \$550,500

Budget and Cash Leverage

Budget Name	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Personnel	\$150,000	\$15,000	-	\$165,000
Contracts	\$370,000	\$85,000	in-kind for NPS, MnDOT, and DNR crews and coordination and CCM for project coordination-	\$455,000
Fee Acquisition w/ PILT	\$0	\$0	-	\$0
Fee Acquisition w/o PILT	\$0	\$0	-	\$0
Easement Acquisition	\$0	\$0	-	\$0
Easement Stewardship	\$0	\$0	-	\$0
Travel (in-state)	\$10,000	\$0	-	\$10,000
Professional Services	\$0	\$0	-	\$0
Direct Support Services	\$15,000	\$0	-	\$15,000
DNR Land Acquisition Costs	\$0	\$0	-	\$0
Capital Equipment	\$0	\$0	-	\$0
Other Equipment/Tools	\$500	\$0	-	\$500
Supplies/Materials	\$5,000	\$0	-	\$5,000
DNR IDP	\$0	\$0	-	\$0
Total	\$550,500	\$100,000	-	\$650,500

Personnel

Position	FTE	Over # of years	LSOHC Request	Anticipated Cash Leverage	Cash Leverage Source	Total
Outreach Coordinator	0.50	5.00	\$150,000	\$15,000	in-kind MDA project coordination	\$165,000
Total	0.50	5.00	\$150,000	\$15,000	-	\$165,000

Capital Equipment - NONE

Output Tables

Table 1. Acres by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0
Protect in Easement	0	0	0	0	0
Enhance	0	0	4,000	0	4,000
Total	0	0	4,000	0	4,000

Table 2. Total Requested Funding by Resource Type

Type	Wetlands	Prairies	Forest	Habitats	Total
Restore	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0
Enhance	\$0	\$0	\$550,500	\$0	\$550,500
Total	\$0	\$0	\$550,500	\$0	\$550,500

Table 3. Acres within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	0	0	0	0	0	0
Protect in Fee with State PILT Liability	0	0	0	0	0	0
Protect in Fee W/O State PILT Liability	0	0	0	0	0	0
Protect in Easement	0	0	0	0	0	0
Enhance	4,000	0	0	0	0	4,000
Total	4,000	0	0	0	0	4,000

Table 4. Total Requested Funding within each Ecological Section

Type	Metro/Urban	Forest/Prairie	SE Forest	Prairie	Northern Forest	Total
Restore	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee with State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Fee W/O State PILT Liability	\$0	\$0	\$0	\$0	\$0	\$0
Protect in Easement	\$0	\$0	\$0	\$0	\$0	\$0
Enhance	\$550,500	\$0	\$0	\$0	\$0	\$550,500
Total	\$550,500	\$0	\$0	\$0	\$0	\$550,500

Table 5. Target Lake/Stream/River Miles

8 miles

Parcel List

Section 1 - Restore / Enhance Parcel List

Washington

Name	TRDS	Acres	Est Cost	Existing Protection?
Parcel 01	02920202	0	\$0	Yes
Parcel 02	02920203	0	\$0	Yes
Parcel 03	02920211	0	\$0	Yes
Parcel 04	02920214	0	\$0	Yes
Parcel 05	02920215	0	\$0	Yes
Parcel 06	02920222	0	\$0	Yes
Parcel 07	02920223	0	\$0	Yes
Parcel 08	03020210	0	\$0	Yes
Parcel 09	03020211	0	\$0	Yes
Parcel 10	03020214	0	\$0	Yes
Parcel 11	03020215	0	\$0	Yes
Parcel 12	03020216	0	\$0	Yes
Parcel 13	03020221	0	\$0	Yes
Parcel 14	03020222	0	\$0	Yes
Parcel 15	03020227	0	\$0	Yes
Parcel 16	03020228	0	\$0	Yes
Parcel 17	03020233	0	\$0	Yes
Parcel 18	03020234	0	\$0	Yes

Section 2 - Protect Parcel List

No parcels with an activity type protect.

Section 2a - Protect Parcel with Bldgs

No parcels with an activity type protect and has buildings.

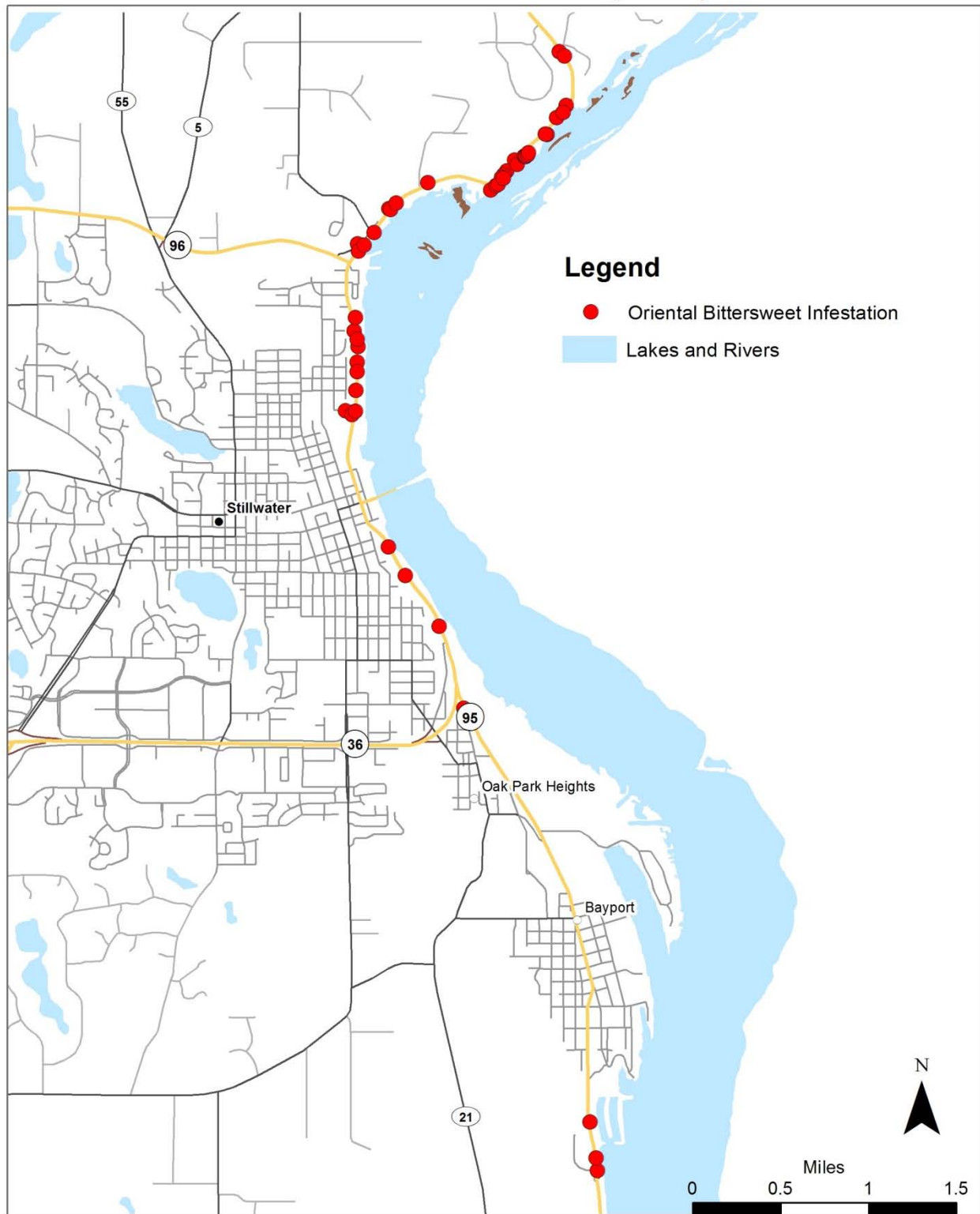
Section 3 - Other Parcel Activity

No parcels with an other activity type.

Project Component	Category	Item	Amount	Receiving Funds
Outreach	Personnel	Half-time outreach coordinator position at MDA with mean salary of \$20,000/year and fringe at 53% for 5 years	150,000	MDA
Outreach	Supplies	Miscellaneous supplies for creating outreach displays and other materials at \$1,000/year for 5 years	5,000	MDA
Outreach	Equipment	Camera with GPS to take images and link them to Google maps to better communicate Oriental bittersweet occurrences with volunteers	500	MDA
Outreach	Travel	Car rental, fuel, etc. for 5 years	10,000	MDA
Outreach	Support Services	\$250/month for 5 years for cell phone, network connectivity, computer, and software	15,000	MDA
Outreach	Contract	Printing posters, pamphlets, and other outreach materials for 5 years. Note that we do not write a contract for printing but do use a vendor.	13,000	MDA
Outreach	Contract	Advertising with billboards at 2 billboards/yr at \$5,000 each production costs included for 2-3 months for 5 years	50,000	MDA will contract with an advertising vendor
Plan	Contract	Oriental bittersweet management plan development	7,000	MDA will contract with a plan writer
Control	Contract	CCM Crews and GPS Equipment	300,000	MDA will contract with CCM
Total			\$550,500	

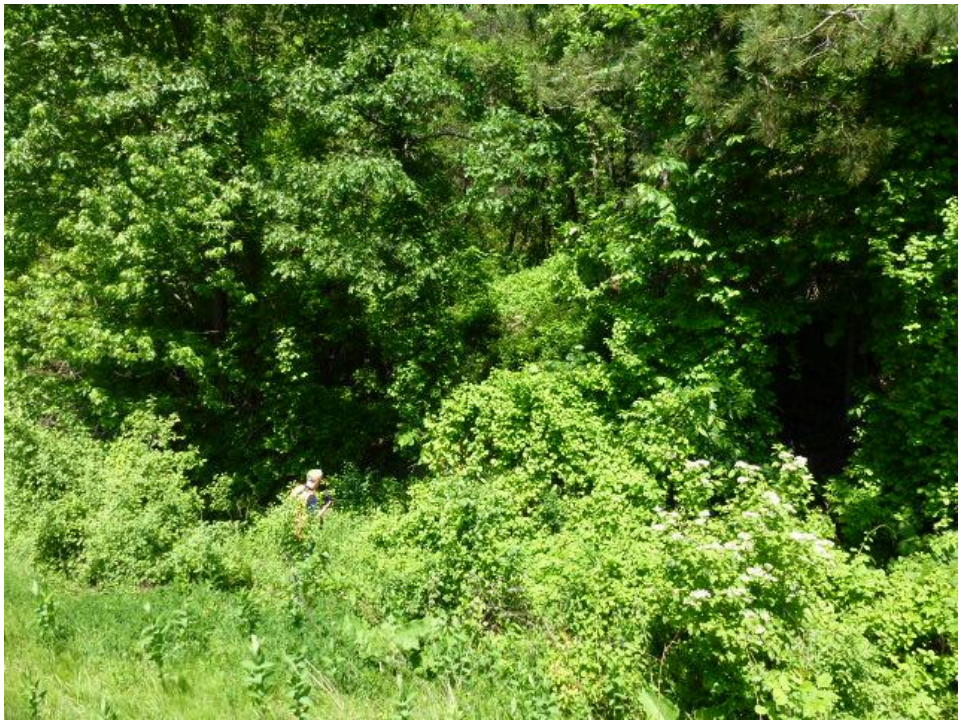
In-kind at \$100,000 for NPS, MnDOT, DNR crews and MDA and CCM for project coordination and GIS support

Oriental Bittersweet Infestations Along the St. Croix River and Highway 95





A severe infestation in Winona shows Oriental bittersweet overtaking vegetation and breaking trees resulting in a tangled mess of vines.



Oriental bittersweet is climbing other vegetation (left) and covering the ground (right) along the St. Croix River near Stillwater.